

124 H900 1.00

Work Order ID 81733

March-16-12 3:16:58 PM

81733

Page 1

Item ID: D3691-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: STUD

Start Date: 16/03/2012 Start Qty: 30.00

30

Cust Item ID:

Required Date: 23/04/2012 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/19 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3691

Rev D

100

0.00

100

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

DO NOT USE CHOP SAW

Cut blank 7.750" long

SL 126110

30 φ

110

0.00

110

DOOSAN LATHE

Doosan

Memo

0.00

Doosan Lathe

1-Turn as per Folio FA716 Rev: 44 & Dwg D3691 Rev: 1 2-Deburr
per dwg D3691
3-Check .625" bore with DT9530 GO/NO GO Gauge

30 φ

160

0.00

160

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

30 φ

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
		14						

NOTE: Date & initial all entries

81733

March-16-12 3:16:58 PM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 16/03/2012 **Start Qty:** 30.00 ***30***

Cust Item ID:

Required Date: 23/04/2012 **Req'd Qty:** 30.00 ***30***

Customer:

Reference:

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Insp. Stamp

0.00

170

QC

Quality Control

Memo

0.00

100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT

0.00

171

Purchasing

Purchasing

Memo

0.00

Liquid Penetrant Inspection as per QSI 038

Issue P/O: 17380

LPI as per dwg D3691

Attach copy of NDT results to work order

Receive & Inspect for Damage & Mat'l Certs

0.00

173

Packaging

Packaging

Memo

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Work Order ID 81733***81733***

Page 3

March-16-12 3:16:58 PM

Item ID: D3691-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: STUD

Start Date: 16/03/2012 Start Qty: 30.00

30

Cust Item ID:

Required Date: 23/04/2012 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

175

QC5- Inspect part completeness to step on W/O

0.00

175

QC

Memo

0.00

Quality Control

30

12/07/09

180

Identify as per dwg & Stock Location: GA

0.00

180

Packaging

Memo

0.00

Packaging

30

12/07/09

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

CK 12/7/10

12-07-09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

March-16-12 3:17:03 PM

Page 1

Work Order ID: 81733

81733

Parent Item: D3691-1

D3691-1

Parent Item Name: STUD

Start Date: 16/03/2012

Required Date: 23/04/2012

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP Rev:A New Issue 08-01-29 JLM Verified By:EC
 IPP Rev:B Material Change 09-01-07 JLM Verified By:EC IPP
 REV:C AS PER REV D 10-03-16 JLM VERIFIED BY:EC
 IPP Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased			No		f	45.2000		21.91096			
M174PH-H900R1 000										**	S 1216110		
17-4SS H900 ROUND BAR 1.00													

Location	Loc Qty	Loc Code
MAT030	45.2	
117445	21.2	
120767	24	

121280
121918

18 Rt
2 Rt

W/O:		WORK ORDER CHANGES					
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	81733
Description: Stud		Part Number:	D3691-1
Inspection Dwg: D3691	Rev: D	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	.675	/		SA-9	Vern
45°	0.5°	45°	/			
0.625	+0.004/-0.000	.627	/			
1.25	+0.000/-0.03	1.285	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	R0.03	/			
0.11 Ref	+/-0.030	.11	/			
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	.181	/			
1.31	+/-0.030	1.330	/			
1.65	+/-0.030	1.620	/			
0.750	+0.000/-0.010	.747	/			
Ø0.659	+0.000/-0.015	.649	/			
7.625	+/-0.015	7.630	/		SA-3	Vern 12"
2.90	+/-0.030	2.855	/			
3/4-16UNF-2A	N/A		/			
0.075 x 45°	+/-0.010 x 0.5°	0.075 x 45°	/			
0.375	+0.000/-0.010	.375	/			
Ø0.189	+0.005/-0.001	.181	/			
R0.25	+/-0.030	R.25	/			
R0.50	+/-0.030	R.50	/			

Measured by: SA	Audited by: [Signature]	Prototype Approval:	N/A
Date: 12/6/10	Date: 12/07/03	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	
B	09.11.04	Dwg Rev updated	KJ	
C	10.03.31	Dimensions revised per Dwg Rev D	KJ	

Dart Aerospace Ltd

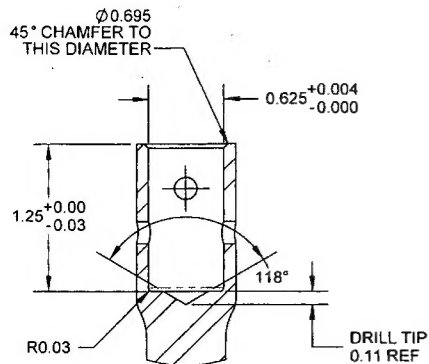
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DETAIL B
SCALE 2X
C6-1

SHOP COPY
RETURN TO
ENGINEERING
CONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

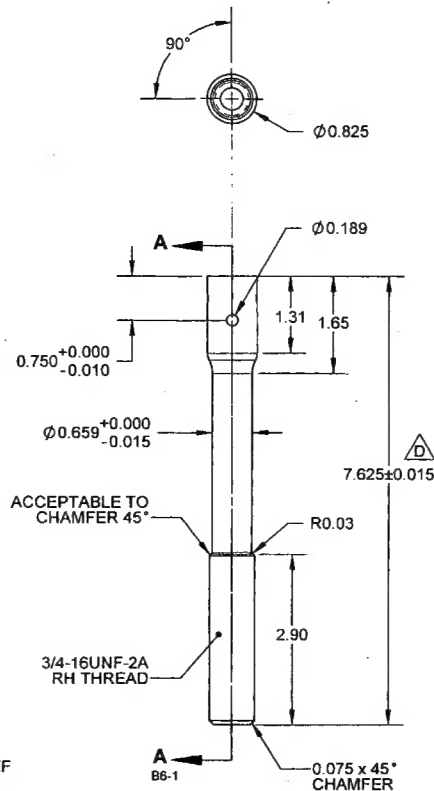
NO. 81733 MLJ
12/03/19

NOTES:

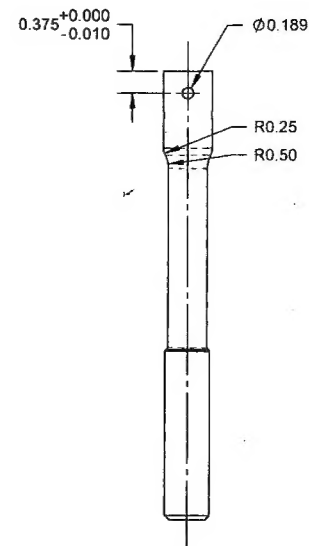
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.81 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

ACCEPTABLE TO
CENTER DRILL,
MAX #4

SECTION A-A
D4-1



D3691-1 STUD



RELEASED
2010-03-15

D	7.625 WAS 7.750 (ZN C4-1)	RF	10.03.03
C	0.20 WAS 0.16 & CENTER DRILL #4 WAS CENTER DRILL #2 (ZNB6-1); UPDATE NOTE 8 TO REF QSI (ZN A8-1)	RF	09.09.09
B	CHANGE TO 17-4PH H-900 (ZN A8-1); 0.695 WAS 0.665 (ZN D8-1); REFORMATTED TO CURRENT DWG STANDARDS	RF	08.11.24
A	NEW ISSUE	RF	08.03.12
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.03.03		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D3691** REV. D
SHEET 1 OF 1
TITLE **STUD** SCALE NTS

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W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 12193

CLIENT DART AERO SPACE DATE July 6-2012 PAGE 1 OF 1
ATTENTION LINDA/ANDY ACUREN JOB No. 180-12-C0278 TIME AM ☒ PM ☐
ADDRESS 1270 ABELDEN ST. HAWKESBURY POWO No. 17380
ON. WORK LOCATION SAME
ACCEPTANCE STD. ASTM 147/051-038 REV./DATE 2008
PROJECT F.P.I. ON MACHINED PARTS
ITEM(S) EXAMINED RAPPEL'S, STUD'S, SLEEVE'S

JOB DESCRIPTION PROCEDURE No. LT-002 REV./DATE 2008 TECHNIQUE No. LT-002 REV./DATE 2008
PART No. SEE RESULTS MATERIAL STAINLESS STEEL THICKNESS VARIOUS
SCOPE A WET FLUORESCENT LIQUID PENETRANT EXAMINATION
WAS COMPLETED ON SURFACE 100%

TEST DETAILS

METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNA FLUX</u>	BLACK LIGHT S/N <u>16459</u> <input type="checkbox"/> OUTPUT > 1000 μ W/CM ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>2LG7</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>CASINO</u>
DEVELOPER <u>SADSS2</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>1098866</u> CAL DUE DATE <u>July 2012</u>
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	

TEST SURFACE

SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F

RESULTS- ☒ METRIC ☐ IMPERIAL

W.O.#	STUD	
5 81735	" "	✓
30 81733	" "	✓
16 83359	" "	✓
W.O.#	RAPPEL	
5 84719	" "	✓
W.O.#	SLEEVE	
15 83358	" "	✓

m/ 12.07.09

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE <u>Andy Sheldon</u> PRINT	<u>Sheldon</u> SIGNATURE	DTR # <u>E-163066</u>
TECHNICIAN (SIGNATURE): <u>Mike Jones</u>		REPORT REVIEWED BY:
NAME (PRINT): <u>Mike Jones</u>	2 ND TECHNICIAN	NAME INITIALS
CGSB LEVEL <u>2</u> SNT LEVEL	CGSB LEVEL SNT LEVEL	
CGSB REG. No. <u>6606</u>	CGSB REG. No.	